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Commission on the Limits of the Continental Shelf

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Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf

Adopted by the Commission on 13 May 1999 at its fifth session

Corrigendum

8. Delineation of the outer limits of the continental shelf based on sediment thickness

8.4. Sources and magnitudes of error

Propagation of thickness errors to position errors

1. **Page 66, paragraph 8.4.8**

The second sentence *should read*:

The Commission proposes a more sophisticated method by applying the following formula, which also takes into account the slope of the seabed and the dip of the top surface of the basement:

$$\Delta X = \Delta Y / (\tan (\beta + \theta) + \tan \alpha)$$

where ΔX is the error in distance, ΔY is the error in thickness, θ is the angle of dip of the top of the basement, α is the slope of the sea floor and β is the angle between the top of the basement and the 1 per cent line (i.e., the line showing the thickness increasing by 1 per cent of the distance from the starting point).

2. **Page 70, figure 8.3**

Replace the existing figure with the attached.

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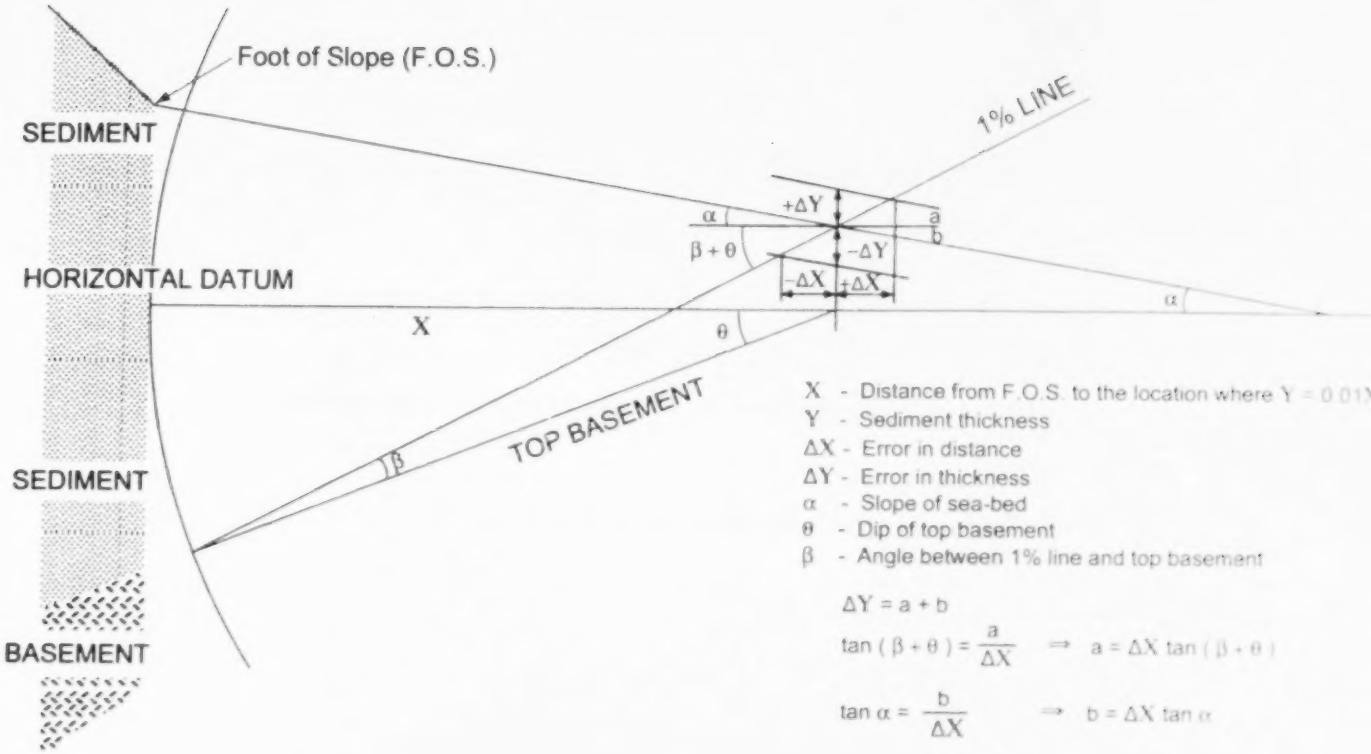

X - Distance from F.O.S. to the location where Y = 0.01X
Y - Sediment thickness
ΔX - Error in distance
ΔY - Error in thickness
α - Slope of sea-bed
θ - Dip of top basement
β - Angle between 1% line and top basement

$$\Delta Y = a + b$$

$$\tan(\beta + \theta) = \frac{a}{\Delta X} \quad \Rightarrow \quad a = \Delta X \tan(\beta + \theta)$$

$$\tan\alpha = \frac{b}{\Delta X} \quad \Rightarrow \quad b = \Delta X \tan\alpha$$

$$\Downarrow$$

$$\Delta Y = a + b = \Delta X \tan(\beta + \theta) + \Delta X \tan\alpha$$

$$\Downarrow$$

$$\Delta Y = \Delta X (\tan(\beta + \theta) + \tan\alpha)$$

$$\Downarrow$$

$$\Delta X = \frac{\Delta Y}{\tan(\beta + \theta) + \tan\alpha}$$

$$\beta = \text{Arctan}\left(\frac{0.01\cos\theta}{1 + 0.01\sin\theta}\right)$$

Figure 8.3 The relationship between error in thickness and distance, the slope of the seabed and the dip of surface of the top of the basement, on applying the limit criteria of the 1% thickness line (i.e., the line showing the thickness increasing by 1% of the distance from the starting point)